



UNITED STATES PATENT AND TRADEMARK OFFICE

UNITED STATES DEPARTMENT OF COMMERCE
United States Patent and Trademark Office
Address: COMMISSIONER FOR PATENTS
P.O. Box 1450
Alexandria, Virginia 22313-1450
www.uspto.gov

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/017,676	12/14/2001	Shahram Abdollahi-Alibeik	204.1001.02	9559

7590 12/17/2004

SHAHRAM ABDOLLAHI-ALBELK
P.O. BOX 19389
STANFORD, CA 94309

EXAMINER

RATAILLE, PIERRE MICHE

ART UNIT PAPER NUMBER

2186

DATE MAILED: 12/17/2004

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Applicati n No.

10/017,676

Applicant(s)

ABDOLLAHI-ALIBEIK ET AL. 

Examiner

Pierre-Michel Bataille

Art Unit

2186

-- The MAILING DATE of this communication appears n the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 28 October 2004.
- 2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-34 is/are pending in the application.
- 4a) Of the above claim(s) 1-9 is/are withdrawn from consideration.
- 5) ☒ Claim(s) 16-27 and 32-34 is/are allowed.
- 6) ☒ Claim(s) 10-15 and 28-31 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
- Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
 2. ☐ Certified copies of the priority documents have been received in Application No. _____.
 3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152) |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
Paper No(s)/Mail Date _____ | 6) <input type="checkbox"/> Other: _____ |

DETAILED ACTION

1. This Office Action is taken in response to Applicant's communication filed October 29, 2004 responding to prior Rejection dated April 28, 2004. Applicant's amendment and/or arguments have been considered with the results that follow.

2. Claims 10-34 are now pending in the application under prosecution as claims 1-9 have been canceled and claims 10-34 newly added.

Response to Arguments

3. Applicant's arguments with respect to claims 10-34 have been considered but are moot in view of the new ground(s) of rejection.

The examiner, however, would like to respectfully emphasize that certain claims, unlike the application statement of novelty, recite known features as addressed below. With respect to claim 10, the features required in the apparatus claimed are known and pertinent to multiple CAM devices, a plurality of content addressable memory banks storing lookup routing addresses, bank-level content for comparing memory array for each content addressable memory bank, comparator for comparing the contents of said bank level with the memory array for deciding whether search address is in the corresponding content addressable memory bank, and connecting and activation means for connecting to said bank and activating said bank. The unexpected result of "activating only the content addressable memory bank if the routing address is deterministically known to be that memory bank" is disclosed in at least Pereira et al (US 6,711,041) and Clark, II et al (US 6,069,573). Although one single reference is

Art Unit: 2186

applied below, the applicant is invited to study the other references cited before making a final response to this Office Action.

Claim Rejections - 35 USC § 102

4. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless --

(e) the invention was described in (1) an application for patent, published under section 122(b), by another filed in the United States before the invention by the applicant for patent or (2) a patent granted on an application for patent by another filed in the United States before the invention by the applicant for patent, except that an international application filed under the treaty defined in section 351(a) shall have the effects for purposes of this subsection of an application filed in the United States only if the international application designated the United States and was published under Article 21(2) of such treaty in the English language.

5. Claims 10-15 and 28-31 are rejected under 35 U.S.C. 102(e) as being anticipated by US 6,711,041 (Pereira et al).

With respect to claims 10, 13, Pereira discloses the invention as claimed, (Fig. 59 is an illustration) a plurality of content addressable memory banks and bank arrays storing range of routing addresses with search logic for deciding whether search addresses match corresponding content addressable memory bank and a selector for selecting the said content addressable memory bank matching the search. Col. 7, Lines 52 to Col. 8, Line 9 specifically discloses the compare operation and the selective activation of bank matching the routing address and the disabling of other banks not matching the routing address. Fig. 32 and Fig. 37 illustrate block match circuit and matching logic and Fig. 60 illustrates block selector circuit.

Art Unit: 2186

Pereira [Col. 40 Line 66 to Col. 41 Line 40] specifically discloses address circuit with register banks for maintaining class-based addresses to access the CAM array in response to certain read and write instructions; the address circuit maintains a bank of highest-priority-match (HPM) registers to store the device indexes that result from class-based compare operations, where the blocks of the CAM array are partitioned classes of storage (e.g. classes A, B and C) with device index that results from a compare operation in register of the HPM register bank that corresponds to each of the classes, respectively. By this arrangement, read operations which reference the highest priority match addresses on a class basis may be supported such that: a sequence of compare operations at classes A, B and C with desire to read the contents of the highest priority match address for a given class, the appropriate HPM register within the HPM register bank will then be selected to provide the address for the read operation. (See also Col. 44, Lines 23-54; Col. 48, Line 65 to Col. 49, Line 24)

With respect to claims 11-12, 14-15, Pereira discloses each content addressable memory bank associated with a routing prefix length (a particular class with independent width and depth configuration), said content addressable memory to be a binary type memory bank and a priority encoder inside each content addressable memory bank to resolve multiple prefix length is eliminated (each block priority encoder 5212(0)-5212(3) in each bank to output a respective bank index, therefore, multiple classes are eliminated) [Col. 41, Lines 9-17].

Art Unit: 2186

Claims 28-31, reciting features corresponding to claims 11-15 as rejected above, are therefore rejected in view of the same arguments.

Allowable Subject Matter

6. Claims 16-27 and 32-34 are allowed.

Conclusion

7. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure.

US 6,069,573 (Clark, II et al) teaching match address signal prioritization in a content addressable memory encoder with the match signal indicative of the CAM cell array in the bank providing.

8. Applicant's amendment necessitated the new ground(s) of rejection presented in this Office action. Accordingly, **THIS ACTION IS MADE FINAL**. See MPEP § 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire **THREE MONTHS** from the mailing date of this action. In the event a first reply is filed within **TWO MONTHS** of the mailing date of this final action and the advisory action is not mailed until after the end of the **THREE-MONTH** shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will


Art Unit: 2186

the statutory period for reply expire later than SIX MONTHS from the date of this final action.

9. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Pierre-Michel Bataille whose telephone number is (571) 272-4178. The examiner can normally be reached on Mon-Fri (9:30A to 6:00P).

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Matthew M. Kim can be reached on (571) 272-4182. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).


Pierre-Michel Bataille
Primary Examiner
Art Unit 2186

December 10, 2004

PIERRE BATAILLE
PRIMARY EXAMINER